PATENT ABSTRACTS OF JAPAN

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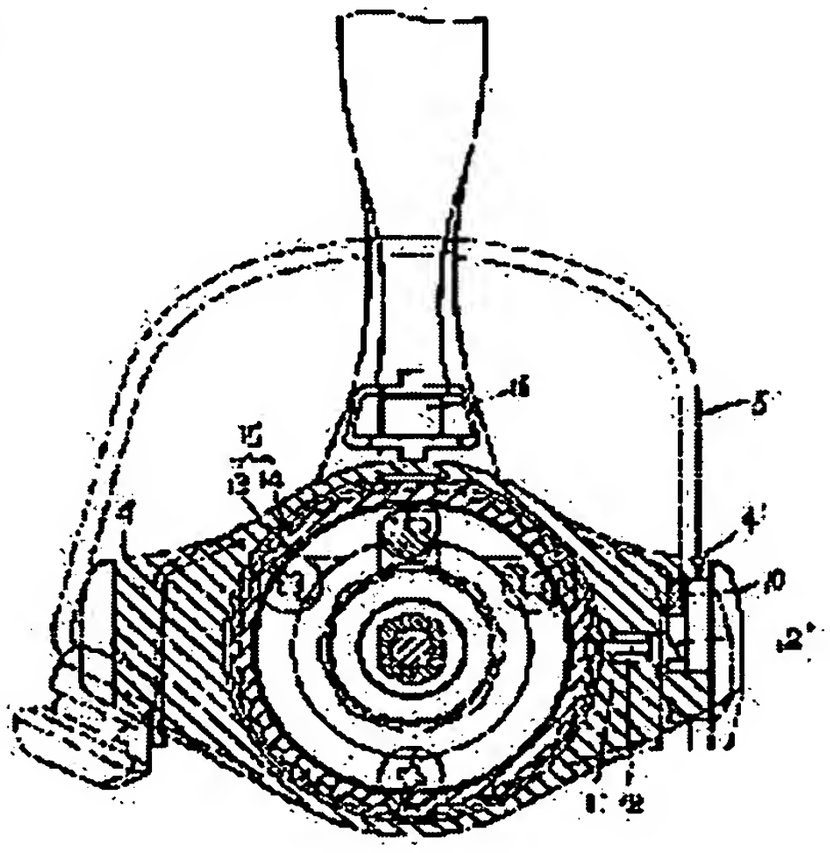
(54) SPINNING REEL FOR FISHING

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a spinning reel for fishing, capable of preventing the scale-up of the reel due to a preventing mechanism, stabilizing the rotation balance of a rotor, and facilitating a fishing operation, when setting the preventing mechanism for preventing a bail from returning to a fishing line- winding position by the inertia force of the rotor, when the fishing line wound on the spinning reel for fishing is cast.
SOLUTION: A rotor brake 15 comprising a circular uneven engaging member 14 and an elastic rubber ring 13 fit into the engaging member 14 is disposed in the front portion of a reel main body 1. An engaging member 12 capable of being freely struck and brought into contact with the rotor brake 15 by the inverted action of a bail disposed on the bail-supporting arm 4' of the rotor 3 is supported on the base portion of the rotor 3 in a state capable of being moved in the inner diameter direction. When a fishing line is cast, a braking resistance is given to the rotation direction of the rotor 3 by the struck contact action of the engaging member 12 with the rotor brake 15.



LEGAL STATUS

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CLAIMS

[Claim(s)]
[Claim 1] In the spinning reel for fishing which supported the bail to revolve free [reversal in a fishing line **** location and a fishing line emission location] on the bail support arm of the pair prepared in the both sides of the rotor supported by the anterior part of the body of a reel free [rotation] While supporting the engagement member which operates by reversal of a bail to the base of said bail support arm movable to the method of the inside of the direction of a path of a rotor The spinning reel for fishing characterized by preparing the rotor braking object which said engagement member **** in the body of a reel, and giving damping resistance to the hand of cut of a rotor at the time of fishing line emission.
[Claim 2] The spinning reel for fishing according to claim 1 characterized by forming a rotor braking object with the elastic rubber ring attached in the body of a reel with which the annular irregularity engagement section and this annular irregularity engagement section with which an engagement member engages fit in.
[Claim 3] The spinning reel for fishing according to claim 1 characterized by forming by the abbreviation half annular flat spring which prepared the rotor braking object in the body of a reel.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to amelioration of the bail reversal device of the spinning reel for fishing.
[0002]
[Description of the Prior Art] The bail reversal device of the spinning reel for fishing Although the symmetry energization operation of a DETTO point spring is used in order to distribute especially this bail to the reversal location of a fishing line emission location and a fishing line **** location and to hold the bail reversed in the fishing line emission location, while enabling it to return to a fishing line **** location by rotation of a handle When a handle rotates with the inertial force at the time of the throw of a mechanism (at the time of casting), a rotor rotates, a bail reversal device operates and there is a defect by which a bail returns to a fishing line **** location. In order to improve this defect, braking rotation of the rotor at the time of a fishing line emission condition, and preventing the reversal return of a bail so that JP,54-127789,U may see is known.
[0003]
[Problem(s) to be Solved by the Invention] However, since said well-known reversal return prevention method of a bail is held in the rotation stop operation of a rotation cam prepared in the base of a bail support arm, while the installation tooth space of the rotation cam is needed, the bail support arm base of a rotor becomes large as a result and a reel is enlarged, troubles, such as breaking down the rotation balance of a rotor, are. This invention also aims reversal return actuation of a bail at offering the spinning reel for fishing which was made to be made smoothly further while it improves such a defect in the conventional method and aims at miniaturization of the bail support arm base of a rotor, and improvement in the rotation balance of a rotor.
[0004]
[Means for Solving the Problem] In the spinning reel for fishing which supported the bail to revolve free [reversal in a fishing line **** location and a fishing line emission location] on the bail support arm of the pair prepared in the both sides of the rotor supported by the anterior part of the body of a reel free [rotation] in order that this invention might attain said purpose While supporting the engagement member which operates by reversal of a bail to the base of said bail support arm movable to the method of the inside of the direction of a path of a rotor It is what is characterized by preparing the rotor braking object which said engagement member **** in the body of a reel, and giving damping resistance to the hand of cut of a rotor at the time of fishing line emission. Said rotor braking object is formed with the annular irregularity engagement section with which an engagement member engages, and the elastic rubber ring attached in the body of a reel with which this annular irregularity engagement section fits in. When the annular irregularity engagement section when the engagement member at the time of fishing line emission engages with the annular irregularity engagement section makes damping resistance the frictional resistance force over an elastic rubber ring, It may form by the abbreviation half annular flat spring which prepared the rotor braking object in the body of a reel,

and elastic thrust to the abbreviation half annular flat spring of the engagement member at the time of fishing line emission may be made into damping resistance.
[0005]
[Embodiment of the Invention] The rotor 3 which will be interlocked with rotation of a handle 2 and will rotate it to the anterior part of the reel case 1 of a spinning reel so that it may be well-known if the gestalt of operation of this invention is explained about the example of a drawing is supported. A bail 5 is fixed to revolve by the point of bail support arm 4 and 4' formed in the both sides of this rotor 3 at one, and it is constituted so that a fishing line can be wound around this and the spool 6 supported so that a handle 2 might be interlocked with so that it may be well-known, and both-way sliding might be carried out at the reel case 1 by the bail 5.
[0006] While the DETTO point spring 7 with which the deer was carried out and said bail 5 was formed in the bail support arm 4 distributes a bail 5 to a fishing line **** location and a fishing line emission location and energizing The fixing-with-a-spindle section of bail support arm 4' is connected with the kick lever 10 which was fixed to revolve by support arm 4' through the connection lever 9 which engaged with the long hole 8 and to rotate. Operation section 10' of this kick lever 10 is formed in inclination-cam-die section 12' formed in the outer edge of the engagement member 12 which was supported by radial in the base of bail support arm 4', and was energized towards the method of outside with the spring 11 free [contact]. When a bail 5 is in a fishing line **** location, operation section 10' does not engage with inclination-cam-die 12' of the engagement member 12 like drawing 10 . When reversing a bail 5 in a fishing line emission location, operation section 10' engages with inclination-cam-die section 12' like drawing 11 , and it is constituted so that a spring 11 may be resisted, and the engagement member 12 can be projected to the method of the inside of the direction of a path of a rotor and may be closed.
[0007] Moreover, the rotor braking object 15 which becomes the elastic rubber ring 13 and this elastic rubber ring 13 of a cross-section KO mold by which attachment immobilization was carried out from the annular irregularity engagement section 14 which fits in rotatable is formed in the body 1 of a reel in the inner circumference section at the anterior part of said reel 1. When a bail 5 is in a fishing line emission location, it is formed so that the tip of said projected engagement member 12 may engage with the crevice of the annular irregularity engagement section 14 of the rotor braking object 15 and may give damping resistance to the hand of cut of a rotor 3 by the frictional resistance force of the annular irregularity engagement section 14 and the elastic rubber ring 13. In addition, 16 in drawing is the kick boss for a bail return prepared in the body 1 of a reel which said kick lever 10 ****.
[0008] Since the example of this invention is constituted as mentioned above, if the bail 5 which is in a fishing line **** location like drawing 4 is reversed in the fishing line emission location of drawing 5 Since operation section 10' of the kick lever 1 in the location of drawing 10 makes this move to the method of the inside of the direction of a path and makes the tip engage with the annular irregularity engagement section 14 of the rotor braking object 15 as it engages with inclination-cam-die section 12' of the engagement member 12 and is shown in drawing 11 Damping resistance is given to a rotor 3 by the frictional resistance force over the elastic rubber ring 13 of the annular irregularity engagement section 14 in a hand of cut. If the reversal return of the bail 5 by fishing line emission actuation is prevented and a rotor 3 is rotated in the fishing line **** direction by the handle 2 in this condition Operation section 10' of the kick lever 10 which projects like drawing 5 and is in a condition is ****(ed) to the kick boss 16 for a bail return. It can wind around spool 6 with the bail 5 of a rotor 3 which the kick lever 10 is rotated, the energization force of the DETTO point spring 7 is resisted, and a fishing line **** location carries out the reversal return of the bail 5 through the connection lever 9, and rotates a fishing line.
[0009] The example shown in drawing 12 thru/or drawing 17 uses the abbreviation half annular flat spring prepared in the body of a reel as a rotor braking object. Drawing 12 stopped the other end by the pin 18, and formed the rotor braking object 15 while it fixed the end of the half-annular flat spring 17 to the body 1 of a reel. Drawing 13 forms the rotor braking object 15 with the coil spring 20 which energized the arc annular supporter 19 fixed to the body 1 of a reel, the flat spring 17 which ****(ed) on the front face, and this flat spring 17 to the method of outside.

The example shown in drawing 14 and drawing 15 fixes to the body 1 of a reel the bending edge of the half-annular flat spring 17 bent to the L type. The example shown in drawing 16 is a deformation example which fixed the end of the arc flat spring 17 in the example of said drawing 13 to the body 1 of a reel, and energized the other end to the method of outside with the coil spring 20. Furthermore, what is shown in drawing 17 is the example of the rotor braking object 15 which carried out extension bending of the 1 side edge section of flat-spring 17' and 17' of two sheets which carried out the polymerization at the method of outside, and formed ****** of the engagement member 12. All, in the fishing line emission location of a bail 5, according to a press **** operation of the engagement member 12, these examples give damping resistance to the hand of cut of a rotor, and prevent the reversal return of the bail 5 at the time of fishing line emission.

[0010]

[Effect of the Invention] Since this invention was supported so that the engagement member which faces preventing the reversal return of the bail by the rotor inertial force at the time of a mechanism throw, and brakes rotation of a rotor might be moved to the method of the inside of the direction of a path in the base of a rotor By comparing with the conventional rotation cam method and being able to miniaturize the magnitude of the installation tooth space in a rotor base, and the direction of a path Aiming at maintenance of a rotor base on the strength, enabling the miniaturization of a reel can aim at stability of a rotor of rotation balance with ****, and it can perform fishing actuation smoothly easily.

[0011] Moreover, by forming especially the rotor braking object that an engagement member **** with the elastic rubber ring attached in the body of a reel with which the annular irregularity engagement section and this annular irregularity engagement section fit in Since the annular irregularity engagement section is formed so that braking may be given to a rotor by the frictional resistance force of a rotor hand of cut over an elastic rubber ring while ensuring engagement to the annular irregularity engagement section of the engagement member at the time of fishing line emission, bail reversal actuation and a rotation operation of a rotor -- an impact, since the braking object is formed with the tubular object while being able to carry out smoothly few It becomes easy increase and to reversal operate a degree of freedom at the time of real fishing, without restraining the bail location of the hand of cut which carries out reversal actuation, and fishing actuation can be performed smoothly much more efficiently.

[0012] Moreover, it forms by the abbreviation half annular flat spring which prepared the rotor braking object in the body of a reel, and when giving damping resistance to the hand of cut of a rotor in the **** operation by the elastic thrust to the flat spring of an engagement member, the reversal actuation to the fishing line emission location of a bail and a rotation operation of a rotor can be performed smoothly [there is no impact respectively and] easily. Moreover, since it considered as the configuration which forms the incorrect return arrester of a bail apart from the turnover device which returns to a fishing line **** condition from the fishing line emission condition of a bail, the bail incorrect return at the time of emission can be prevented, without causing trouble to an inverting function.

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* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] This invention is a notching front view a part.
[Drawing 2] The same section notching front view.
[Drawing 3] Drawing 1 A-A line vertical section side elevation.
[Drawing 4] the bail support arm at the time of this fishing line **** part -- a notching front view.
[Drawing 5] the bail support arm at the time of this fishing line emission part -- a notching front view.
[Drawing 6] the bail support arm of another side at the time of this fishing line **** part -- a notching front view.
[Drawing 7] the bail support arm of another side at the time of this fishing line emission part -- a notching front view.
[Drawing 8] The vertical section front view of the important section at the time of this fishing line ****.
[Drawing 9] This important section expansion vertical section front view.
[Drawing 10] The vertical section side elevation at the time of this fishing line ****.
[Drawing 11] The vertical section side elevation at the time of this fishing line emission.
[Drawing 12] The vertical section side elevation of another example of this invention.
[Drawing 13] The vertical section side elevation of the 1st modification of this another example.
[Drawing 14] The vertical section side elevation of the 2nd modification of this another example.
[Drawing 15] The sectional view of the important section of drawing 12 .
[Drawing 16] The vertical section side elevation of the 3rd modification of this another example.
[Drawing 17] The sectional view of the important section of drawing 14 .
[Description of Notations]
1 Body of Reel
3 Rotor
4and4' Bail support arm
5 Bail
12 Engagement Member
13 Elastic Rubber Ring
14 Annular Irregularity Engagement Section
15 Rotor Braking Object
17 Half-Annular Flat Spring

[Translation done.]